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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,028	11/26/2001	Keith Firman	604-617	8246

23117 7590 06/16/2005

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EXAMINER	
BAUSCH, SARAE L	
ART UNIT	PAPER NUMBER
1634	

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/992,028	FIRMAN, KEITH	
	Examiner	Art Unit	
	Sarae Bausch	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-15 and 29-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-15 and 29-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The examiner reviewing your application at the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to examiner Sarae Bausch.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/28/2005 has been entered.

Status of Claims

2. This action is in response to papers filed 03/28/2005 in which claims 2, 7, 10-12, and 30-32 were amended. Claims 1 and 16-28 have been cancelled and claims 2-15 and 29-32 are pending. New grounds of rejection are set forth below. **This action is Non-Final.**

Withdrawn Rejections

3. The rejections of claims 31 and 32, under 35 U.S.C. 112, 1st paragraph, made in section 20, page 8 of the previous office action, is withdrawn in view of the amendment to the claims.

4. The rejections of claims 2-15 and 29-32, under 35 U.S.C. 112, 2nd paragraph, made in section 22, page 8 of the previous office action, is withdrawn in view of the arguments made in section IV, page 11 of the response mailed 01/28/2005. The arguments were found persuasive and the rejection has been withdrawn.

5. The rejections of claims 2, 3, 7-12, and 29-30, under 35 U.S.C. 102(b), made in section 10, page 3 of the previous office action, is withdrawn in view of amendment to the claims.

6. The rejections of claims 31 and 32, under 35 U.S.C. 103(a), made in section 25, page 10 of the previous office action, is withdrawn in view of amendment to the claims.

New Grounds of Rejections

Claim Rejections - 35 USC § 112 - New Matter

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 2-15 and 29-32 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The amendment to claims 2 and 12, "wherein the enzyme remains fixed to the nucleic acid at the original binding site throughout translocation". The specification teaches, on page 8, lines 4-9, a complex between a polynucleotide sequence, such as a DNA sequence, and an enzyme, such as $R_1M_2S_1$, capable of translocating the nucleic acid sequence without causing cleavage thereof or other apparent effect that would detract from its usefulness, such as polymerase activity. The specification further teaches on page 9, lines 10-18, a polynucleotide motor system comprising a nucleic acid sequence having bound thereto an enzyme capable of translocating the nucleic acid sequence without causing cleavage thereof and a bound substance capable of remaining bound to the nucleic acid sequence during translocation. However the specification does not teach or exemplify an enzyme that remains fixed to the nucleic acid at the

original binding site throughout translocation. The specification provides no indication of the criticality of having an enzyme remained fixed to the nucleic acid at the original binding site. As discussed in MPEP 2163.05, section II, the introduction of claim changes which involve narrowing the claims by introducing elements or limitations which are not supported by the as-filed disclosure is a violation of the written description requirement of 35 U.S.C. 112, first paragraph.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 2-15 and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by anticipated by Janscak et al (Nucleic acid research, 1998, vol. 26, pp. 4439-4445) as evidenced by van Noort et al. (Nucleic Acid Research, 2004, vol. 32, pp. 6540-6547).

With regard to claims 2-3 and 12, Janscak et al. teach a gel retardation analysis (solid support) of the complex $R_1M_2S_1$ –DNA (molecular motor system) (see figure 3). Janscak et al. teach the $R_1M_2S_1$ -DNA complex does not cleave its bound DNA but does retain ATPase activity (see abstract). Janscak et al. teaches the DNA region of the complex comprises a linear 39 base oligonucleotide (linear DNA, instant claim 3) with a proximal region of the oligonucleotide which includes the binding site of EcoR124I and a distal region of the oligonucleotide that comprises a substance (nucleic acid sequence (bound substance) adjacent to the recognition site) (see page 4440, DNA substrates). Janscak et al. teaches the bound protein comprises Mtase and

HsdR subunit (see page 4440, protein preparation). Janscak et al. inherently teach a molecular motor system (DNA-protein complex) that comprises a nucleic acid sequence that has bound to a proximal region a translocating enzyme (EcoR124I, $R_1M_2S_1$) capable of remaining fixed to the original binding site of the proximal region during translocation without cleaving the DNA and a distal region of the nucleic acid capable of remaining bound to the nucleic acid during translocation.

With regard to claims 4-6 and 13-15, Janscak et al. teach the bound protein of the DNA-protein complex comprises type IC, EcoR124I restriction endonuclease with Mtase (HsdM and HsdS), and HsdR subunit (see page 4440, protein preparation. Janscak et al. teach a stoichiometric form, $HsdR_1M_2S_1$ (see figure 3, page 4442).

With regard to claims 7-9, 11 and 29, Janscak et al. teach a $R_1M_2S_1$-DNA complex (molecular motor system) that is bound to a non-denaturing polyacrylamide gel (solid support, instant claim 8 and 9) that is stained with ethidium bromide solution (direct attachment of material, instant claim 7 and 11) (see page 4440, Determination of subunit ratio in the endonuclease-DNA complexes and figure 3).

With regard to claims 10 and 30-32, Janscak et al. teach a $R_1M_2S_1$-DNA complex (molecular motor system) that comprises a oligoduplex DNA bound to the enzyme EcoR124I ($R_1M_2S_1$) (see figure 3). Janscak et al. teach the oligoduplex comprising a binding site for EcoR124I and a distal region (5' region of the oligoduplex adjacent to the binding site of EcoR124I) that is labeled with ^{32}P (bound substance is a material (5' end of the oligoduplex with a ^{32}P required and capable of being translocated) (see DNA substrates, page 4440).

The claimed invention reads on the teaching of Janscak et al. because Janscak et al. teach the claimed molecular motor system. The molecular motor system, $R_1M_2S_1$-DNA complex taught by Janscak et al encompasses the limitation of claims 2 and 12, "wherein the enzyme remains fixed to the nucleic acid at the original binding site throughout translocation, the system operating in such a manner such that cleavage of the nucleic acid does not occur" as evidenced by van Noort et al. van Noort et al. teach the DNA translocation process for the $R_1M_2S_1$ bound to DNA (see figure 1 and 2). Van Noort et al. teach the motor ($R_1M_2S_1$ enzyme) translocated adjacent DNA through the motor/DNA complex, which remains tightly bound to the recognition sequence and translocation produces an expanding loop of DNA (see figure 1 and 2). As disclosed in the instant specification, the preferred embodiment of the claimed invention is EcoR124I, R_1-complex, see page 10, lines 1-5. Thus, the product of $R_1M_2S_1$-DNA complex as taught by Janscak et al inherently results in molecular motor system, wherein the enzyme remains fixed to the nucleic acid at the original binding site throughout translocation, the system operating in such a manner such that cleavage of the nucleic acid does not occur. Furthermore,

As per the MPEP 2112, the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

As per the MPEP 2112.01, where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433.

Therefore, absent any evidence to the contrary, the skilled artisan would necessarily expect that $R_1M_2S_1$-DNA complex of Janscak et al., would result in claimed invention.

10. Claims 2-15 and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Janscaak et al. (J. Mol. Biol. 1996, vol. 257, pp. 977-991).

With regard to claims 2-8 and 12-15 Janscaak et al. teach type I restriction-modifying enzyme, endonuclease EcoR124I bound with a 39mer DNA without cleaving the DNA sequence (see page 981, 2nd column, last paragraph cont'd to page 982, 1st column, 1st paragraph). Janscaak et al. teach the DNA duplex immobilized on a biosensor chip (solid support) (instant claim 7 and 8). Janscaak et al. teach the restriction-modified enzyme exhibits a stoichiometric form of $HsdR_1M_2S_1$ (instant claims 4-6 and 13-15) when bound to the nucleic acid (substance) (see bridging paragraph pp. 979-980). Janscaak et al. teach a 39mer DNA duplex having a single binding recognition site at a proximal region of the DNA and a second nucleic acid sequence adjacent to the recognition site (bound substance) (instant claim 7) (see page 981, 2nd column, last paragraph and see page 989, surface plasmon resonance analysis).

With regard to claims 9-11 and 29-32, Janscaak et al. teach the 39mer oligoduplex biotinylated at the 5'end of oligonucleotide 1 immobilized on a streptavidin coated surface of a biosensor chip (see page 989, surface plasmon resonance analysis).

The claimed invention reads on the teaching of Janscak et al. because Janscak et al. teach the claimed product, a molecular motor system. The molecular motor system, $R_1M_2S_1$-DNA complex taught by Janscak et al encompasses the limitation of claims 2 and 12, "wherein the enzyme remains fixed to the nucleic acid at the original binding site throughout translocation, the system operating in such a manner such that cleavage of the nucleic acid does not occur" as

evidenced by van Noort et al. van Noort et al. teach the DNA translocation process for the $R_1M_2S_1$ bound to DNA (see figure 1 and 2). Van Noort et al. teach the motor ($R_1M_2S_1$ enzyme) translocated adjacent DNA through the motor/DNA complex, which remains tightly bound to the recognition sequence and translocation produces an expanding loop of DNA (see figure 1 and 2). As disclosed in the instant specification, the preferred embodiment of the claimed invention is EcoR124I, R_1-complex, see page 10, lines 1-5. Furthermore, the specification exemplifies attaching an oligonucleotide to the surface of a surface plasmon resonance chip by exemplifying an oligonucleotide complex EcoR124I, R_1 carrying a biotin molecule (see pages 34-36, examples 4A-C). Thus, the product of $R_1M_2S_1$-DNA complex as taught by Janscak et al inherently results in molecular motor system, wherein the enzyme remains fixed to the nucleic acid at the original binding site throughout translocation, the system operating in such a manner such that cleavage of the nucleic acid does not occur. Furthermore,

As per the MPEP 2112, the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

As per the MPEP 2112.01, where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433.

Therefore, absent any evidence to the contrary, the skilled artisan would necessarily expect that $R_1M_2S_1$-DNA complex of Janscak et al., would result in claimed invention.

11. Claims 2-15 and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Mernagh et al. (Biol. Chem., vol 379, April/May 1998, pp. 497-503).

With regard to claims 2-8 and 12-15 Mernagh et al. teach type I restriction-modifying enzyme, endonuclease EcoR124I bound to a biotin-labeled 30bp oligonucleotide duplex containing the EcoR124I recognition site and immobilizing on to streptavidin sensor chip (see page 502, 1st-2nd column). Mernagh et al. teach the DNA duplex immobilized on a biosensor chip (solid support) (instant claim 7 and 8). Mernagh et al. teach the restriction-modified enzyme exhibits a stoichiometric form of $HsdR_1M_2S_1$ (instant claims 4-6 and 13-15) when bound to the nucleic acid (substance) (see page 498, 2nd column, 1st paragraph). Mernagh et al. teach a 30 bp DNA duplex having a single binding recognition site at a proximal region of the DNA and a second nucleic acid sequence adjacent to the recognition site (bound substance) (instant claim 7) (see page 502, 1st-2nd column).

With regard to claims 9-11 and 29-32, Mernagh et al. teach the 30 bp duplex biotinylated and immobilized on a streptavidin coated surface of a biosensor chip (see page 502, 1st-2nd column).

The claimed invention reads on the teaching of Mernagh et al. because Mernagh et al. teach the claimed product, a molecular motor system. The molecular motor system, $R_1M_2S_1$-DNA complex taught by Mernagh et al encompasses the limitation of claims 2 and 12, "wherein the enzyme remains fixed to the nucleic acid at the original binding site throughout translocation, the system operating in such a manner such that cleavage of the nucleic acid does not occur" as evidenced by van Noort et al. van Noort et al. teach the DNA translocation process for the $R_1M_2S_1$ bound to DNA (see figure 1 and 2). Van Noort et al. teach the motor ($R_1M_2S_1$ enzyme)

translocated adjacent DNA through the motor/DNA complex, which remains tightly bound to the recognition sequence and translocation produces an expanding loop of DNA (see figure 1 and 2). As disclosed in the instant specification, the preferred embodiment of the claimed invention is EcoR124I, R_1-complex, see page 10, lines 1-5. Furthermore, the specification exemplifies attaching an oligonucleotide to the surface of a surface plasmon resonance chip by exemplifying an oligonucleotide complex EcoR124I, R_1 carrying a biotin molecule (see pages 34-36, examples 4A-C). Thus, the product of $R_1M_2S_1$-DNA complex as taught by Mernagh et al inherently results in molecular motor system, wherein the enzyme remains fixed to the nucleic acid at the original binding site throughout translocation, the system operating in such a manner such that cleavage of the nucleic acid does not occur. Furthermore,

As per the MPEP 2112, the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

As per the MPEP 2112.01, where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433.

Therefore, absent any evidence to the contrary, the skilled artisan would necessarily expect that $R_1M_2S_1$-DNA complex of Mernagh et al. would result in claimed invention.

Response to Arguments

12. The response traverses on page 7, 3rd paragraph of the response mailed 01/28/2005 that claim 2 has been amended to further distinguish the claimed invention from the cited prior art, by specifically reciting that the enzyme remains fixed to the nucleic acid at the original binding site throughout translocation. The response asserts that no new matter is entered. This response has been thoroughly reviewed but not found persuasive. The newly added limitation in claims 2 and 12 is new matter as set forth in section 8 of this office action. The newly added limitation in claims 2 and 12 of the enzyme remaining fixed to the nucleic acid at the original binding site is an inherent property of the enzyme, EcoR124I, in the form $R_1M_2S_1$-DNA (the enzyme cited in the prior art) as evidenced by van Noort et al. (see sections 9-11 above). There is no indication that the enzyme taught by Janscaak et al (1996 and 1998) as well as Mernagh et al. does not remain fixed at the original binding site during translocation and the system does not operates in a manner such that cleavage of the nucleic acid does not occur. Furthermore, as stated in the MPEP 2112.01, "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433. Therefore, the burden is on the applicant to show that the enzyme as taught by Janscaak et al (1996 and 1998) and Mernagh et al. does not remain bound to the original binding site of the nucleic acid during translocation. As further stated in the MPEP 716.01 regarding the timely submission of evidence:

A) Timeliness.
Evidence traversing rejections must be timely or seasonably filed to be entered and entitled to consideration. In re Rothermel, 276 F.2d 393, 125 USPQ 328 (CCPA 1960). Affidavits and declarations submitted under 37 CFR 1.132 and other evidence traversing rejections are considered timely if submitted:
(1) prior to a final rejection,
(2) before appeal in an application not having a final rejection, or
(3) after final rejection and submitted
(i) with a first reply after final rejection for the purpose of overcoming a new ground of rejection or requirement made in the final rejection, or
(ii) with a satisfactory showing under 37 CFR 1.116(b) or 37 CFR 1.195, or
(iii) under 37 CFR 1.129(a).

The response traverses on page 8, 2nd paragraph, the assertion by the examiner on page 3 of the previous action that in Janscak "the Mtase is the second bound substance...". This response has been thoroughly reviewed and is moot in view of the new rejection set forth in section 9 of this office action.

The response asserts, on page 8, last paragraph cont'd to page 9, 1st paragraph that the stoichiometry of $R_1M_2S_1$ for the endonuclease was later shown to be incorrect and is reported as such in Janscak 1998 and Menagh, which teach that EcoR1241I restriction endonuclease is a mixture of two species, having the stoichiometry of $R_2M_2S_1$ and $R_1M_2S_1$. The response asserts that there is no disclosure in the cited art of the $R_1M_2S_1$ species being harnessed to do useful work as a molecular motor and the use of the native enzyme therefore falls outside the scope of the present claims. This response has been thoroughly reviewed but not found persuasive. The claims are drawn to a molecular motor system "comprising" a translocating enzyme bound to a nucleic acid. As stated in the MPEP 2111.03, "the transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., > Invitrogen

Corp. v. Biocrest Mfg., L.P., 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("The transition comprising' in a method claim indicates that the claim is open-ended and allows for additional steps.");< Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); In re Baxter, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); Ex parte Davis, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts"). Therefore, the recitation of "comprising" in the instant pending claims allows for additional species to be present, including $R_2M_2S_1$ which is able to cleave DNA. Furthermore, the prior cited art does teach the limitation of "enzyme remains fixed to the nucleic acid at the original binding site throughout translocation" and "operating in such a manner such that cleavage of the nucleic acid does not occur". For these reasons, the rejections are maintained.

Conclusion

13. No claims allowable over the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarae Bausch whose telephone number is (571) 272-2912. The examiner can normally be reached on M-F 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (571) 272-0745. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application

or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Sarae Bausch, PhD.
Examiner
Art Unit 1634

W. Gary Jones
Supervisory Patent Examiner
Technology Center 1600